

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of suppressing echo signals generated in a communication path comprising the steps of:

monitoring signals supplied to said communication path to determine the power level of said monitored signals; and

masking digitized signals received from said communication path as a function of the determined power level of said monitored signals by combining a string of n-bits with said digitized signals, at least the most significant bits of said string having a zero value.

2. Cancelled

3. Cancelled

4. (Previously Presented) The method of claim 1 wherein during said monitoring step, an envelope of the power level of said monitored signals is generated.

5. (Original) The method of claim 4 wherein said envelope is generated by an infinite impulse response (IIR) lowpass filter.

6. (Currently Amended) The method of claim 5 wherein said IIR lowpass filter generates said envelope by solving the equation:

$$\text{AbsY} = (1-\alpha) * \text{AbsY} + \alpha * \text{AbsY}_0$$

where α is a parameter of said IIR filter, Y is the power level of the current monitored signal and Y_0 is the power level of a previous monitored signal and AbsY and AbsY_0 are the absolute values of the power levels Y and Y_0 respectively.

7. (Original) The method of claim 6 wherein during said monitoring step an echo signal level is calculated by solving the equation:

$$\text{Echo} = \text{AbsY}/10^{(A/20)}$$

where A is the minimum attenuation of echo signals in said communication path, said echo signal level being used to select a mask to be combined with digitized signals received from said communication path.

8. Cancelled

9. (Previously Presented) The method of claim 1 wherein all of the bits of said string are zeros.

10. (Previously Presented) The method of claim 1 wherein at least the least significant bit of said string has a one value.

11. Cancelled

12. (Previously Presented) The method of claim 7 wherein all of the bits of said string are zeros.

13. (Previously Presented) The method of claim 7 wherein at least the least significant bits of said string has a one value.

14. Cancelled

15. Cancelled

16. (Previously Presented) An echo suppressor to suppress echo signals generated in a communication path comprising:

a power level calculator determining the power level of signals supplied to said communication path; and

a mask generator responsive to said power level calculator and generating masks, said masks being in the form of strings of n-bits, where n is a function of the power level of the signals supplied to said communication path, at least the most significant bits of said strings having zero values, said masks being applied to the digital signals received from said communication path thereby to suppress echo signals received from said communication path.

17. (Original) An echo suppressor as defined in claim 16 wherein said power level calculator generates an envelope following the power level of the signals supplied to said communication path.

18. (Original) An echo suppressor as defined in claim 17 wherein said power level calculator includes an infinite impulse response (IIR) lowpass filter to generate said envelope.

19. (Currently Amended) An echo suppressor as defined in claim 18 wherein said IIR lowpass filter generates said envelope by solving the equation:

$$\text{AbsY} = (1-\alpha) \cdot \text{AbsY} + \alpha \cdot \text{AbsY}_0$$

where alpha is a parameter of said IIR filter, Y is the power level of the current signal supplied to said communication path and Y_0 is the power level of a previous signal supplied to said communication path and AbsY and AbsY₀ are the absolute values of power levels Y and Y₀ respectively.

20. (Original) An echo suppressor as defined in claim 19 wherein said mask generator calculates an echo signal level by solving the equation:

$$\text{Echo} = \text{AbsY} / 10^{(A/20)}$$

where A is the minimum attenuation of echo signals in said communication path, said echo signal level being used by said mask generator to select a mask to be combined with digitized signals received from said communication path.

21. Cancelled

22. (Previously Presented) An echo suppressor as defined in claim 16 wherein all of the bits of said strings are zeros.

23. (Previously Presented) An echo suppressor as defined in claim 16 wherein at least the least significant bit of each string has a one value.

24. Cancelled

25. Cancelled

26. (Previously Presented) An echo suppressor as defined in claim 20 wherein all of the bits of said strings are zeros.

27. (Previously Presented) An echo suppressor as defined in claim 20 wherein at least the least significant bit of each string has a one value.

28. (Currently Amended) A method of suppressing echo signals generated in a communication path comprising the steps of:

monitoring signals supplied to said communication path to determine the power level of said monitored signals by solving the equation:

$$\text{Echo} = \text{Abs Y}/10^{(A/20)}$$

where A is the minimum attenuation of echo signals in said communication path, said echo signal level being used to select a mask to be combined with digitized signals received from said communication path;

generating an estimated echo signal and determining the power level thereof;
subtracting the estimated echo signal from a signal received from said communication path to yield a difference signal; and

masking said difference signal as a function of the determined power level of said monitored signals.

29. Cancelled

30. Cancelled

31. (Previously Presented) The method of claim 29 wherein during said masking a string of n bits is applied to said difference signal, where n is a function of the echo signal level, at least the most significant bits of said string having a zero value.

32. (Previously Presented) A method of suppressing echo signals generated in a communication path comprising the steps of:

monitoring signals supplied to said communication path;
performing power calculations to determine the power level of said signals supplied to said communication path;

generating a masking signal in the form of a string of n-bits, where n is a function of the power level of current signals supplied to said communication path and the power level of previous signals supplied to said communication path, at least the most significant bits of said string having a zero value; and

applying said masking signal to a digital signal received from said communication path.

33. (Previously Presented) The method of claim 32 wherein at least the least significant bit of said mask has a one value.

34. (Currently Amended) A method of suppressing echo signals generated in a communication path comprising the steps of:

monitoring signals supplied to said communication path;

~~performing power calculations to determine the power level of said signals and then to determine an echo signal level by solving the equation:~~

$$\text{Echo} = \text{AbsY}/10^{(A/20)}$$

~~where A is the minimum attenuation of echo signals in said communication path and Y is the power level of the current monitored signal;~~

generating an envelope of the power level of said signals with an infinite impulse response (IIR) lowpass filter by solving the equation:

$$\text{AbsY} = (1-\alpha) * \text{AbsY} + \alpha * \text{AbsY}_0$$

where alpha is a parameter of said IIR lowpass filter and, Y is the power level of the current monitored signal, Y₀ is the power level of a previous monitored signal and AbsY and AbsY₀ are the absolute values of power levels Y and Y₀ respectively; and

performing power calculations to determine the power level of said signals and then to determine an echo signal level by solving the equation:

$$\text{Echo} = \text{AbsY}/10^{(A/20)}$$

where A is the minimum attenuation of echo signals in said communication path; and

masking digitized signals received from said communication path by using said echo signal level to select a mask to be combined with said digitized signals, said mask being a string of n-bits, where n is a function of the echo signal level, at least the most significant bits of said string having a zero value.

35. (Previously Presented) The method of claim 34 wherein all of the bits of said string are zeros.

36. (Previously Presented) The method of claim 34 wherein at least the least significant bits of said string has a one value.

37. (Currently Amended) An echo suppressor to suppress echo signals generated in a communication path comprising:

a power level calculator determining the power level of signals supplied to said communication path, said power level calculator including an infinite impulse response (IIR) lowpass filter to generate an envelope following the power level of said signals supplied to said communication path by solving the equation:

$$\text{AbsY} = (1-\alpha) \cdot \text{AbsY} + \alpha \cdot \text{AbsY}_0$$

where alpha is a parameter of said IIR lowpass filter, Y is the power level of current signals supplied to said communication path and, Y_0 is the power level of previous signals supplied to said communication path and AbsY and AbsY₀ are the absolute values of the power levels Y and Y₀ respectively; and

a mask generator responsive to said power level calculator and generating masks, said mask generator calculating an echo signal level by solving the equation:

$$\text{Echo} = \text{AbsY} / 10^{(A/20)}$$

where A is the minimum attenuation of echo signals in said communication path, said echo signal level being used by said mask generator to select masks to be combined with digitized signals received from said communication path thereby to suppress echo signals received from said communication path, said masks being in the form of strings of n-bits, where n is a function of the echo signal level, at least the most significant bits of said strings having zero values.

38. (Previously Presented) An echo suppressor as defined in claim 37 wherein all of the bits of said strings have zero values.

39. (Previously Presented) An echo suppressor as defined in claim 37 wherein at least the least significant bit of each string has a one value.